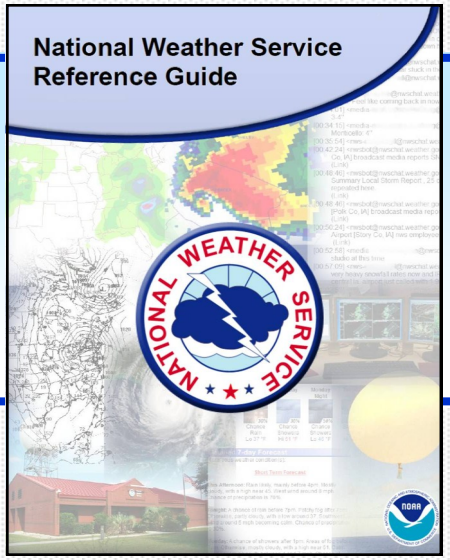

5. Communication Channels

Table of Contents

Click on description to go directly to the page.

5. Communication Channels

The forecasts and various products that the NWS develops would be of no use without proper communication channels to get this information to the users of the products. This section will list and discuss the numerous ways the forecast and other products are disseminated throughout the country.

NWS Website (www.weather.gov)

With emerging technologies, the most widely accessible venue for receiving forecast information as well as watches/warnings and other hydrology and climatology data has grown to be the local office websites. Nearly all products developed by the NWS office are available on individual websites. Local office websites are examined in detail in the web section.

NOAA Weather Radio

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather and water information directly from the nearest forecast office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, seven days a week.

Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information. In conjunction with Federal, state and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards, including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills) and public safety (such as AMBER alerts or 911 telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by NOAA. NWR includes 1000 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found in the VHF public service band at these seven frequencies (MHz):

http://www.nws.noaa.gov/nwr/

162.400	162.425	162.450	162.475	162.500	162.525	162.550

Most NOAA Weather Radio All Hazards receivers have a tone-alert feature that can be set to alert mode for automatic activation when certain watches and warnings are issued. Higher grade models can be programmed to activate for user specified counties. All NWS products have the capability of being tone-alerted. To prevent unnecessary alerts and to maintain the proper hierarchy of products, most WFOs only choose to alert short-fused headlines that require urgent action to protect lives and property, such as tornado watches and warnings, severe thunderstorm watches and warnings, flash flood warnings, hurricane headlines and tsunami headlines. Some offices choose to tone-alert certain winter weather headlines such as blizzard warnings and ice storm warnings.

Emergency Alert System (EAS)

The NWR network is the NWS entry-point into the Emergency Alert System (EAS), which is composed of AM, FM, TV broadcast stations and cable television operators on an organized basis during emergencies at national, state, Tribal, and local levels. It provides an efficient means for the dissemination of standardized emergency information through the use of participating broadcast stations and cable operators. EAS is designed so that agencies and Tribal governments with an emergency message only need to transmit the message once to be received by all area broadcasters and cable operators simultaneously. For more details, refer to your state EAS plan and/or contact members of your state EAS committee. A listing of all event codes that generate EAS activations can be found in the state plan.

National-level Activation

At the national level, the President of the United States, in a national emergency, can direct activation of the EAS via the use of the EAN event code (Emergency Alert Notification or National EAS Activation). FCC rules dictate that broadcaster participation at the national level is mandatory.

State-level Activation

Each state has the ability to direct activation of the EAS via their State Emergency Operations Center, utilizing the capabilities of designated State-Relay (SR) broadcast stations. SR stations would also re-broadcast EAS alerts. Typically the message would originate from the Governor's office.

Local Activation

Locally, county officials or Tribal government officials may originate a local EAS activation assuming that county has an approved EAS plan that has been reviewed by the state EAS committee.

FCC rules dictate that broadcaster EAS participation at the state and local level is voluntary.

Individual broadcast stations monitor designated Local Primary (LP-1 and LP-2) broadcast stations for EAS activations.

National Weather Service Activation

Convective, short-fuse warnings, such as Tornado Warnings, allow the NWS to be an EAS message originator. However, the current NWR network is an "open loop" in the EAS communications web, since it does not have the capability of automatically relaying EANs or state, Tribal, or local EAS messages. Each NWS office transmits an EAS-type code using the NWR SAME encoder (Specific Area Message Encoder) feature, which will be detected by broadcast station EAS decoders. NWR will send EAS codes for all short-fuse, convective weather warnings, watches and statements.

Each NWS office sends a test EAS as a Required Weekly Test (RWT) or as a Required Monthly Test (RMT).

Alerts received via HazCollect are considered EAS alerts.

NOAA Weather Wire Service (NWWS)

The NWS mission to protect life and property and to enhance the national economy, is carried out by timely delivery through the NWWS of text and graphical products, including warnings, watches, forecasts and other relevant weather, hydrologic, climate and critical non-weather-related information.

NWWS is designed to deliver high priority watch and warning products to users within 10 seconds, and all other products within 30 seconds.

The NWWS is a satellite-based data collection and dissemination system operated by the NWS.

Users have three options for receiving NWWS information: C-band satellite, Ku-band satellite and the Internet, each with its specific advantages, depending on user needs. All NWWS users, including the NWS uplink sites, receive the entire NWWS data stream as part of the outgoing satellite broadcast. Commercial software is available for users to select, manipulate, alarm, display and archive information they require on various devices.

The national master database list managed by the NWS Office of Operational Systems and maintained by the contractor includes all products transmitted on the NWWS. Representative products, each in text format and some in graphical format, include weather warnings, watches, advisories and forecasts; critical non-weather-related warnings; national public weather summaries and tables; and such routine locally prepared products as state, zone and short-term forecasts; weather summaries, climate data and local observations; marine forecasts and other information, and fire pre-suppression forecasts.

Current directive: http://www.nws.noaa.gov/directives/sym/pd01017015curr.pdf

Family of Services (FOS)

The Family of Services (FOS) was established to make weather information available to external users. The FOS provides external users access to near real-time weather data and information on the NWS Telecommunications Gateway NOAAnet Multi Protocol Label Switching System (MPLS) Network.

The objective of the FOS is to provide the commercial meteorological community, the academic community and other Federal agencies with access to near real-time weather information.

Current Directive: http://www.nws.noaa.gov/directives/sym/pd06010curr.pdf

Additional Information:
http://www.weather.gov/datamgmt/doc/NOAAnet%20-%20TG%20Customer%20Communications%202009%

National Warning System (NAWAS)

The National Warning System (NAWAS) is a comprehensive party-line network of telephone circuits connecting state and Federal warning points throughout the United States. It is funded by the Federal Emergency Management Administration (FEMA). Although NAWAS is a national system, the day-to-day operation is under the control of individual states. Each state has its own plan for the use of NAWAS during weather emergencies. NWS offices use this circuit in accordance with individual state plans. Normally, all warnings and watches will be disseminated on the appropriate NAWAS by the issuing office.

Emergency Managers Weather Information Network (EMWIN)

http://www.weather.gov/emwin/

Emergency Managers Weather Information Network (EMWIN) offers an economical way to receive all products available on the NWWS, plus graphical forecasts and select satellite data. Compared to the NWWS, an additional broadcast delay of 5 to 20 seconds can be expected for watches and warnings. The EMWIN system is monitored 24 hours a day, 7 days a week, and has an estimated availability of at least 99%. The service itself is free. As a satellite broadcast system, there are short outages of several minutes duration (60 minutes worst case) during a 3 to 4 day satellite eclipse period, which occurs in the Spring and Fall. The NWWS has backup provisions for such occurrences, whereas EMWIN does not. A backup data source, such as the internet, might be considered during such scheduled outages.

EMWIN is a nonproprietary operational dissemination system developed in the NWS Office of Operational Systems (OPS) primarily for the emergency management community. It provides a continuous, dedicated low speed data broadcast of up to 5,000 pages per day using an audio signal from the GOES satellite or terrestrial retransmitter. The EMWIN data stream consists of:

- Real-time weather warnings, watches, advisories, forecasts
- A subset of alphanumeric products for each state
- A limited suite of non-value added graphical products
- Satellite imagery

End user software provides a friendly environment to monitor the weather, set alarms, auto-print, etc., from a personal computer.

The EMWIN data stream was designed to run at minimal cost to the NWS and at no recurring costs to users in range of the signal. Basic software developed, but unsupported, by the NWS to meet minimum needs of users is available for free and can be downloaded. The EMWIN data stream can effectively meet the needs of public safety managers, schools, and special needs groups such as the deaf and hearing impaired for direct and timely access to large amounts of weather and warning information. NWS has identified EMWIN as one of a number of dissemination technologies in a multi-layered approach that the NWS must use to meet its goal of maximizing the dissemination of its warning and forecast information.

Interactive Weather Information Network (IWIN)

http://www.weather.gov/view/national.php?thumbs=on

Interactive Weather Information Network (IWIN) is an internet site with real-time data very similar to EMWIN data. It is open to any and all users and contains real-time warnings in addition to many routine NWS products. IWIN depends on the availability of the internet, which is not always reliable during major weather events, due to connection problems either at the user end or at NOAA/NWS due to current Internet bandwidth limitations. The types of data available on IWIN include all standard warnings, watches, advisories and routine data, including state forecasts, short term forecasts (nowcasts), zone forecasts, graphical forecasts, select satellite data and most routine NWS products.

iNWS

http://inws.wrh.noaa.gov/

iNWS Alerts allow users to configure and receive text message alerts and e-mail message alerts when the NWS issues a watch, warning or advisory that affects them.

Users can configure their alert preferences geographically and by weather phenomena.

iNWS is intended for members of community emergency planning and response management (i.e. emergency managers, law enforcement managers, fire and emergency response managers, transportation and safety managers, public officials), Skywarn Net Control operators and government partners of NWS offices.

iNWS is not currently available to the general public.

NOAAPORT

The *NOAAPORT* broadcast system provides a one-way broadcast communication of NOAA environmental data and information in near real time to NOAA and external users. This broadcast service is implemented by a commercial provider of satellite communications utilizing C-band.

NWSChat

https://nwschat.weather.gov/

NWSChat is a relatively new tool developed as a means of direct communication between the NWS office and television meteorologists, emergency managers, DNR and other specific partner organizations. The goal of NWSChat is for the users to pass on important information about current weather situations. For example, if a viewer calls a TV station to report baseball size hail, the meteorologists at that station can quickly relay the report onto the NWS office. The NWS office can also provide information to the partners in chat that may be useful, but won't be specifically worded in a warning or other public product. Warnings and other products issued by the office are also automatically piped into the chat for quick viewing. At this time, use of NWSChat is limited to a few very specific organizations (e.g., broadcast meteorologists, emergency managers, law enforcement). For information about signing up for NWSChat, contact your local office WCM.

Social Networking

The NWS is in the beginning stages of endeavoring into social networking. Most offices and national center currently use Facebook to provide information on forecasts and other activities. There is also a national NWS Facebook page where interesting/important information is posted nationally. Further development into social networking is expected in the coming years.

National Facebook Page: http://www.facebook.com/US.National.Weather.Service.gov

NWS YouTube: http://www.youtube.com/user/usweathergov

Twitter Information: http://www.weather.gov/stormreports/